

SEAGRASS

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

DATA LAYER NAME: SG88, SG90, SG92, SG94, SG96
DATA LAYER DESCRIPTION: Seagrass data for Tampa Bay, Sarasota Bay, Lemon Bay, and Charlotte Harbor. Interpreted from 1988, 1990, 1992, 1994, and 1996 from natural color aerial photography and mapped to USGS 1:24,000 quadrangles.
SECTION/DEPARTMENT: Mapping and GIS/Resource Data Department
REVISION/DATE: 2.0/January, 2000

These data were not collected under the supervision of a licensed Professional Surveyor and Mapper.

LINEAGE

Description of Source Material(s)

Name: 1988 natural color aerial photography
Scale (ratio): 1:24,000
Projection: Photographic
Datum: Not Applicable
Source Media: First generation positive transparencies from natural color negatives
Condition of Media: Excellent
Date of Materials: October 1988
Update Schedule: Every two years

Creator Organization or Individual

Name: Southwest Florida Water Management District
Address: 2379 Broad Street, Brooksville, FL 34609-6899
Phone: (352)796-7211

Comments: None

Name: 1990 natural color aerial photography
Scale (ratio): 1:24,000
Projection: Photographic
Datum: Not Applicable
Source Media: First generation positive transparencies from natural color negatives
Condition of Media: Excellent
Date of Materials: December 1990

Update Schedule: Every two years

Creator Organization or Individual

Name: Southwest Florida Water Management District
Address: 2379 Broad Street, Brooksville, FL 34609-6899
Phone: (352)796-7211

Comments: None

Name: 1992 natural color aerial photography
Scale (ratio): 1:24,000
Projection: Photographic
Datum: Not Applicable
Source Media: First generation positive transparencies from natural color negatives
Condition of Media: Excellent
Date of Materials: March 1993
Update Schedule: Every two years

Creator Organization or Individual

Name: Southwest Florida Water Management District
Address: 2379 Broad Street, Brooksville, FL 34609-6899
Phone: (352)796-7211

Comments: The seagrass data is scheduled to be updated every two years, however for the 1992 study, conditions did not permit photography to be flown until March of 1993.

Name: 1994 natural color aerial photography
Scale (ratio): 1:24,000
Projection: Photographic
Datum: Not Applicable
Source Media: First generation positive transparencies from natural color negatives
Condition of Media: Excellent
Date of Materials: January 1995 for Tampa Bay, Sarasota, Lemon Bay and March 1995 for Charlotte Harbor
Update Schedule: Every two years

Creator Organization or Individual

Name: Southwest Florida Water Management District
Address: 2379 Broad Street, Brooksville, FL 34609-6899
Phone: (352)796-7211

Comments: The seagrass data is scheduled to be updated every two

years, however for the 1994 study, conditions did not permit photography to be flown until January and March of 1995.

Name: 1996 natural color aerial photography
Scale (ratio): 1:24,000
Projection: Photographic
Datum: Not Applicable
Source Media: First generation positive transparencies from natural color negatives
Condition of Media: Excellent
Date of Materials: February, April, May 1997 for Tampa Bay; January, April, May, August, October 1997 for Sarasota and Lemon Bay; April, May 1997 for Charlotte Harbor
Update Schedule: Every two years

Creator Organization or Individual

Name: Southwest Florida Water Management District
Address: 2379 Broad Street, Brooksville, FL 34609-6899
Phone: (352)796-7211

Comments: The seagrass data is scheduled to be updated every two years, however for the 1996 study, conditions did not permit photography to be flown until January, February, April, May, and August of 1997.

Name: USGS 7.5 minute quadrangles
Scale (ratio): 1:24,000
Projection: UTM or Polyconic
Datum: NAD 27
Source Media: Paper and Mylar
Condition of Media: Good to Excellent
Date of Materials: Dates range from 1954-1989
Update Schedule: Unknown

Creator Organization or Individual

Name: USGS Eastern Mapping Division
Address: Mapping Center, Reston, VA
Phone: 1-800-USA-MAPS

Comments: None

Derivation Methods for Data

Pre-automation Compilation

Description: Seagrass beds and other related features were delineated from 1:24,000 natural color aerial photography. The photos were

interpreted into eight categories modified from the Florida Department of Transportation's (DOT) Florida Land Use, Cover, and Forms Classification System (FLUCCS). The minimum mapping unit was .5 acres. Coastlines were delineated from the USGS 7.5 quadrangles and modified based on the aerial photography. Beaches are defined as areas between low tide and high tide litter lines. Tidal flats/submerged shallow areas are used for seabeds exposed during low tide or shallow areas that can be clearly delineated on a photo.

Interpretation was confined to a 6" by 6" photo center area. In the 1988 and 1990 studies, interpreters used a four power mirror stereoscope to delineate seabed features onto a clear acetate overlay previously affixed to the aerial photograph. After the completion of the stereo model, the delineated photography was quality checked for edgemarking, polygon labeling, and overall consistency. A zoom transfer scope (ZTS) was used to transfer the linework from the aerial photography to a mylar affixed to a stable base USGS 7.5 quadrangle.

In the 1992, 1994, and 1996 studies, the photography for the previous year was compared to the current photography on a four power mirror stereoscope. A detailed analysis of the changes between the years occurred. The photography, for both studies, was placed on a zoom transfer scope and updates/changes in the seabeds were delineated onto a mylar sheet containing the previous study's linework.

Date of Compilation: 1988 seagrasses were completed between September and December 1989.

1990 seagrasses were completed between January and May 1992.

1992 seagrasses were completed between July and October 1994.

1994 seagrasses were completed in September 1996.

1996 seagrasses were completed in September 1998.

Creator Organization or Individual

Name: Geonex, Inc.
Address: 8950 Ninth Street North, St. Petersburg, FL 33702
Phone: (727)578-0100

Comments: None

Automation Methods

Description: In the 1988 and 1990 studies, the compiled linework was scanned at 400 dots per inch (dpi). The resulting raster data were edited to remove stray pixels and vectorized into SIF ASCII files (Eagle Scanner software). The SIF ASCII files were translated into Arc/INFO using the SIFARC command (ESRI Arc/INFO version 5.0). Once into Arc/INFO format, the data were edited and cleaned to eliminate node and dangle errors by using a fuzzy tolerance of one meter. The digital files were edgematched for a seamless mosaic.

Attributes were added using a manual digitization method. A clean digitizing overlay was registered over the compilation manuscript. The digitizer selected classes from a matrix menu and placed label points wherever the code appeared on the compilation manuscript. The attributed digital files were then processed to thin label points to one-to-one correspondence with logical polygons.

A minimum of four control points per quadrangle were used. These points were located at the four corners of the USGS quadrangles. If necessary, additional points were located at latitude and longitude tics on the quadrangles.

In the 1992, 1994 and 1996 studies, the basemap was registered to the digitizing table with the vectors from the previous year displayed on screen. The change mylar overlay was affixed to the basemap and the change delineations made on the mylar overlay were digitized into the existing linework. These quad-based Arc/INFO coverages were edge-matched between quadrangles.

Date of Automation: 1988 seagrasses were completed between September and December 1989.

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Creator Organization or Individual

Name: Geonex, Inc.
Address: 8950 Ninth Street North, St. Petersburg, FL 33702
Phone: (727)578-0100

Equipment Used: An Intergraph Model 4080 Eagle document scanner was used to scan the linework manuscripts at a resolution of 400 dots per inch. An Altek back-lit digitizing table was used for adding attributes in the 1988, 1990, and 1992 study. The Altek table was also used for linework update in the 1994 and 1996 studies. The resolution of the Altek digitizing table is .001 inches and the tolerance .003 inches.

Software Used: Arc/INFO version 5.0, 6.11 and 7.1.1, Eagle scanner software

Comments: None

COMPLETENESS OF FEATURE CAPTURE

Method: Overlay of check plots with the source material.

Value: 100% of all linework was captured.

Date Determined: Checks were made between August 1992 and September 1998.

Comments: None

POSITIONAL ACCURACY

Method: Overlay of check plots with 1:24,000 USGS maps and comparison of relatively well-defined features such as shorelines.

Value: Estimated to be 13 -100 meters

Date Determined: Checks were made between August 1992 and September 1998.

Comments: The goal of this project was to meet National Map Accuracy Standards for the 1:24,000 USGS maps. Errors introduced during drafting and digitizing are not known, but comparisons with quad sheets indicate that the coastline errors are about 13 - 30 meters. The errors of seagrass polygons are estimated to be between 13-100 meters.

ATTRIBUTE ACCURACY

Method: Visual inspection of overlay on a light table of check plots with source

materials.

Value: It is estimated that seagrass classification accuracy is between 90% to 95%.

Date Determined: Checks were made between August 1992 and September 1998.

Comments: Sampling points have been generated in Tampa Bay, Sarasota Bay, Lemon Bay and Charlotte Harbor to verify photo and field survey inspections. Based on these samples, the accuracy is estimated to be between 90% and 95% for seabed features.

ATTRIBUTE DESCRIPTION

Attribute Name	Attribute Description
FLUCCSCODE	Seagrass classification as defined in the Florida DOT's FLUCCS classification system.
DATESTAMP	The date the feature was last edited or entered into the map libraries by SWFWMD staff.
LEV1	Very general classification of land use/cover as defined in the Florida DOT's FLUCCS classification system.
LEV2	Land use classification more detailed than Lev 1 as defined in the Florida DOT's FLUCCS classification system.
LEV3	Detailed classification of Land use/cover as defined in the Florida DOT's FLUCCS classification system.
LEV4	Very specific classification of Land Use/cover as defined in the Florida DOT's FLUCCS classification system.